

Notice of Allowability

Application No.

10/680,875

Examiner

John B. Sotomayor

Applicant(s)

KIELB, JOHN A.

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed February 5, 2007.
2. ☒ The allowed claim(s) is/are 1-30.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

John B. Sotomayor
Primary Examiner
Art Unit: 3662

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the claims:

In claims 17-30, please underline the claims in their entirety as follows:

17. (Twice Amended) A radar gauge adapted to sense fluid level in a tank, the gauge comprising:

a radar gauge circuit adapted to receive a transmit frequency and a sample frequency controlling radar transmission and level sampling respectively, the radar gauge circuit generating a level output;

a clock source generating first and second clock frequencies and having a control input setting a first frequency separation between the first and second clock frequencies;

a separation sensing circuit coupled to the clock source and generating an evaluation output as a function of the first frequency separation;

a controller receiving the evaluation output, the controller having a timer that measures the frequency separation and a control output feeding back to the control input that

stabilizes the first separation as a function of timing the evaluation outputs; the controller further having a correction circuit that corrects the level output as a function of the first frequency separation;

a circuit processing the first and second clock frequencies to generate third and fourth frequencies separated from each other by a second frequency separation; and

wherein the separation circuit generates a second evaluation output as a function of the second frequency separation.

18. (Previously Presented) The gauge of claim 17, and further comprising a circuit sensing a polarity of the sample clock and generating a further evaluation output representative of the polarity.

19. (Previously Presented) The gauge of claim 17, wherein the further evaluation output is provided to the controller, which controller then uses the further evaluation output to generate, in part, the control input.

20. (Previously Presented) The gauge of claim 17, wherein the circuit sensing the polarity is embodied on a D-flip flop.

21. (Previously Presented) The gauge of claim 20, wherein the D flip flop is a 7474 clocked D-flip flop.

22. (Previously Presented) The gauge of claim 17, wherein the clock source further includes a voltage controlled oscillator (VCO) coupled to the control input.

Art Unit: 3662

23. (Previously Presented) The gauge of claim 17, wherein the separation sensing circuit is embodied on a D-flip flop.

24. (Previously Presented) The gauge of claim 23, wherein the D- flip flop is clocked 7474 D-flip flop.

25. (Previously Presented) The gauge of claim 17, and further comprising a divider circuit dividing the first and second clock frequencies and generating the transmit and sample frequencies wherein the transmit and sample frequencies are separated by a second frequency separation and wherein the first frequency separation is higher than the second frequency separation.

26. (Previously Presented) A method of stabilizing clock generation in a radar gauge adapted to sense fluid level in a tank, comprising:

generating first and second clock frequencies separated from each other by a frequency separation controlled by a control input;

generating a first evaluation output as a function of the frequency separation;

generating a control output feeding back to the control input that stabilizes the separation as a function of the evaluation output;

generating a level output as a function of the stabilized frequency separation, the level output corrected as a function of the frequency separation;

generating an indication of the polarity of the sample clock;

Art Unit: 3662

generating the control output as a further function of the evaluation output and the polarity indication; and correcting the level output as a function of the evaluation output.

27. (Previously Presented) A radar gauge adapted to sense fluid level in a tank, the gauge comprising:

a radar gauge circuit adapted to receive a transmit frequency and a sample frequency controlling radar transmission and level sampling respectively, the radar gauge circuit generating a level output; an unstabilized clock generating a first clock frequency;

a controllable oscillator generating a second clock frequency, the oscillator having a control input setting a first frequency separation between the first and second clock frequencies, the transmit and sample frequencies being related to the first and second clock frequencies;

a separation sensing circuit coupled to unstabilized clock and the controllable oscillator, the sensing circuit generating a separation output as a function of the first frequency separation;

a controller coupled to the radar gauge circuit and providing the level output; and wherein the separation output is operably coupled to the control input such that the first frequency separation is stabilized.

28. (Previously Presented) The gauge of claim 27, wherein the separation output is operably coupled to the control input through the controller.

Art Unit: 3662

29. (Previously Presented) The gauge of claim 28, and further comprising polarity sensing circuitry coupled to the sample clock and the controller, the polarity sensing circuitry being adapted to sense polarity of the sample clock, and provide a polarity output, and wherein the control input is based, at least in part, upon the first frequency separation and the polarity output.

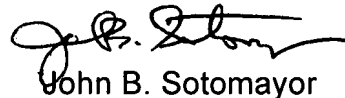
30. (Previously Presented) The gauge of claim 29, wherein the controller is adapted to correct the level output as a function of the first frequency separation.

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Sotomayor whose telephone number is 571-272-6978. The examiner can normally be reached on M-F 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom H. Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John B. Sotomayor
Primary Examiner
Art Unit 3662

jbs